

places they are very common, and live a long time when taken out of the water, by being sprinkled over occasionally with that fluid. One which Mr. Russell thinks to be the female, is always smaller, and not so bright in colour as the other.

I regret this account is so imperfect, especially as I have seen the fish, for when I was at Titalya, in March last, Mr. Russell very kindly sent me two of them. Unfortunately I was on the eve of starting with my family for the hills, and in the bustle of packing up, I had not time to examine them, intending on my arrival here to describe, and preserve the specimens for the Society. And still more unfortunately, I was unable to convey them up here, having been for want of carriage obliged to leave even many of the necessaries of life behind. Mr. Russell undertook to bring them with him; but one of them died and was thrown away in the plains, and the other made its escape from the vessel in which it was confined at Punkahbarry. He has promised to procure other specimens, so I hope soon to have the pleasure of sending some to the Society's Museum.

J. T. PEARSON.

DARJEELING, 10th July, 1839.

ART. III.—*Extracts from official records, with descriptive details regarding the new Nizamut Palace of Moorshedabad—erected by Colonel D. M'LEOD, Chief Engineer of Bengal.*

A superb model of the Moorshedabad Palace is now displayed in the apartments of the Asiatic Society, erected on a scale of half an inch to the foot; it forms an object of perhaps greater interest to the spectator, than would the noble edifice it represents. In the model we have all the details of the structure at once exposed and intelligible. To the amateur architect, as indeed to the general visitor, the documents we now publish, will doubtless prove an instructive and valuable lesson in classical architecture. We should not omit to mention, that every part of the model is of native workmanship, and of the most perfectly beautiful execution.—EDS.

To the Military Board.

Political Dept.

GENTLEMEN,—I am directed by the Honorable the Deputy Governor of Bengal, to transmit for your information and guidance, the accompanying copy of a correspondence with the Committee appointed to report on the Nizamut buildings at Moorshedabad.

2. In making this communication, the Deputy Governor has desired me to observe, with respect to the further works contemplated, the most important are, a new Imambarra, in substitution for the old one, stated to be in a ruinous condition; the removal of Meer Munglee's house, and the building of a new one; and, lastly, a Mudrisso or College. The cost of the whole of these, and of furniture for the Palace, is estimated for 3,60,000, of which 1,50,000 has already been sanctioned for the Imambarra and for the Nawaub's house.

4. His Honor the Deputy Governor, further desires me to take this opportunity of observing, that much praise is due to Colonel D. M'Leod, who has designed and executed this noble edifice, which will long remain a monument of the ability of its architect.

I have, &c.

FORT WILLIAM,
9th January, 1839.

(Signed)

H. T. PRINSEP,
Sec. to the Govt. of Bengal.

*Extracts from the Report of the Special Committee of Inspection ;
dated 10th November, 1838.*

We have the honor to submit, for the information of His Honor the Deputy Governor of Bengal, the result of our proceedings consequent upon the receipt of your letters of the 12th, 19th, ultimo, and without date, received at Moorshedabad, from the Governor General's Agent, in regard to the Nizamut buildings at Moorshedabad.

3. The new Palace is in length 425 feet, by 200 feet in breadth; and of one Order of architecture throughout the whole of its exterior, without any intermixture of the same on a reduced scale, or of any other Order. It stands on a slight elevation, produced by raising the foundation walls three feet above the general level of the ground, and filling up with earth to that height, in a gradual slope, to the extent permitted by the surrounding buildings, and the termination of the premises towards the river, on the banks of which the Palace stands—a conspicuous and imposing feature in the landscape from a great distance. The effect anticipated by raising the structure, as just described, has been fully accomplished.

4. The Order employed is the Grecian Doric. It is forty-six feet nine inches in height, having fluted columns thirty-six feet high; five feet six inches in diameter at the base, and four feet one and a half inches at the neck, with corresponding antæ, and an entablature of ten feet nine inches; the whole surmounting a basement of eighteen feet six inches, of which three feet six inches forms the plinth of the building. Over the entablature are parapet walls, varying in height according to circumstances, and ornamented with panels, plinths, and cornices. The pro-

jections of the cornice of the Order are of stone, having the guttæ and lilies in the angles cut out of the solid. Nothing could be more satisfactory than the execution of the whole detail of what this involves. The Doric Order is notoriously of difficult management, when applied to edifices of complicated design, from the necessity of observing the rules prescribed for the introduction of the triglyphs in the frieze of the entablature. In the present instance, with many projections and recesses, tending to create difficulties, there was not discoverable the slightest deviation from what these rules demand ; the cornices and mouldings were noticed as being cleanly and sharply cut and defined, and all lines and surfaces, whether of stone or plaster, exhibited the most successful result of much labour and minute attention.

5. On the south front is a portico of eight columns, ninety-seven feet nine inches in length, surmounted by a pediment twelve feet high, and having a strong trussed roof of timber secured transversely by iron tie-rods. To the north, is the entrance portico of six columns, measuring seventy feet nine inches in length, with a corresponding trussed roof to the pediment, which rises ten feet ; in the tympanum of either pediment are the arms of the Nuwaib Nazim, perfectly executed in relievo, and forming a very appropriate and effective finish to the whole.

6. Leading to the northern portico, is a noble flight of stone steps, commencing in its breadth above from the centre of the end columns, and having a platform stretching out in the same parallel to a width of twenty-four feet nine inches, from which, descending, it curves outwards on either side till it ends at its base, in a line extending to the length of 129 feet. There are two intermediate platforms, one of ten, and one of five feet in width ; in a line with which last, at the extremities, are well proportioned pedestals with stone slabs, bearing inscriptions (the letters cleanly cut in relief) in English and Persian, exhibiting particulars connected with the erection of the edifice, (see enclosure No. 1,) and in front of these pedestals, on blocks carried out from their bases, corresponding in height and breadth with the last flight of steps, and ten feet six inches in length, are placed two sphinxes, admirably executed, both as regards the design and workmanship. They are of solid teak, but painted and sanded so as exactly to resemble stone, and form highly ornamental appendages to the entrance in the position they occupy. Iron railing, of a graceful pattern, corresponding with that of the colonnades (rising from which are five lamp-posts on either side, with three on either pedestal below) surmounts the flight at either extremity. Underneath, is a capacious carriage way ; and there are three vaulted ranges, two of them open,

and one (the lowest) closed in, and forming *âbdarkhânesh* and other useful offices.

7. To the north front are two smaller porticoes (to the wings) of four columns each, and intermediately between the centre and wings on either front, receding colonnades; which also form leading features of the end fronts of the building.

8. To all the above colonnades, including the porticoes, are continuous balconies to the third floor, four and a half feet wide, of light appearance but of great strength, being constructed of iron beams or cantilevers from nineteen to twenty-one inches apart, inserted in the walls between stones to a depth of one and a half foot, and supported on brackets at intervals, the rest of the material of the floor being of flat bar iron. The floor is composed of tiles, terras, and marble, confined by a plate or band of iron. The railing is partly of iron and partly of teak; the main supports and some of the rails being of the former, upheld by brackets branching from the cantilevers.

9. The spaces over the doors and windows within the colonnades, as well as those of the treble windows in the exterior walls, are relieved by panels, in which are inserted ornaments of various descriptions, in relief of good design, and extremely well executed.

10. There are two open courts in the interior of the building, seventy-two by fifty-two feet, finished in every respect in the same style as the exterior, having substantial drains all round, communicating with large covered ones externally, which are carried to a considerable distance, and empty themselves into the river.

11. Round the exterior of the building there is a platform of the finest masonry, bricken-edge, seven feet wide, from which spring small flights of stone steps to the height of the plinth, leading to the entrances in the several compartments of the edifice; outside of which is a roadway or walk, of corresponding breadth, composed of *koah* nine inches in depth. The plinth of the building has oval flue openings of twenty-two by eighteen inches, furnished with strong iron gratings;—where flights of steps interfere, three of the step-facings in each have gratings, of eighteen inches in length, fixed into them.

12. The interior comprises a basement floor, from thirteen feet to thirteen feet three inches in height to the beams; a principal floor, from twenty-one feet nine inches to twenty-two feet in height, to the ceilings; and a third floor of the same height as the latter.

13. The principal entrance is from the north portico into a vestibule thirty-six feet by twenty-seven feet, having a geometrical stone staircase at either side, seven feet six in width, with iron railing and

mahogany hand-rail, each staircase receiving light from four painted glazed windows.

14. Within this range is a corridor or passage, twelve feet wide ; leading to the wings of the edifice, divided into compartments, and so contrived, that by shutting two doors the communication with the wings is cut off, without any interruption to that between the other portions of the building.

15. From the centre of the corridor a large door opens into a circular room fifty feet in diameter ; to the right and left of which (on entering) is a room fifty-two feet by twenty-five feet ; the three comprising one suite of apartments, separated from the wings by the open courts, (noticed in paragraph 10.) The circular room is of the Corinthian Order, taken from the temple of Jupiter Stator at Rome. The Order is in height thirty feet six inches, with pedestals of four feet six inches. From the entablature, on a line with the frieze, springs a cupola of masonry, with sunk panels, ending in a painted glazed skylight twenty feet in diameter, the height from the floor to the opening of the skylight being fifty-six feet, and to its apex sixty-two feet. The room is decorated in its circumference by four large covered recesses, over which are long panels, eight pilasters, and four large doors ; over which last are oval openings occupied with pierced screens of arabesque, cut in single slabs of stone. All the mouldings and compartments are richly carved and ornamented, in conformity with the rules of the Order of which the apartment is composed ; and, whether as regards the effect of the whole, or the exquisite finish of the details throughout, it is impossible to speak too highly of what has been accomplished. There is nothing to add and nothing to alter : the architect and builder have done their work perfectly.

16. To the south of the above suite, is a grand colonnaded saloon, measuring one hundred and eighty-seven feet six inches in length, susceptible of division at pleasure into three apartments, by means of sliding doors, eighteen feet two inches wide, the leaves sliding into cases, faced on both sides, from the bottom to the top, with mirrors. The general width of this saloon is fifty-five feet, the centre space within the bases of the columns being twenty-five feet. Beyond either extremity of the saloon is a geometrical stone staircase, five feet three inches wide, with railing, as before described, communicating with the apartments of the wings.

17. The wings do not correspond internally with each other : both are divided into apartments of various suitable dimensions, each having a spiral stone staircase at either corner, with baths, dressing rooms, &c.

18. With exception to the circular room (of paragraph 15) the interior of the whole of the principal floor is of the Roman Doric Order.

19. On the third floor the dimensions of the several apartments necessarily correspond with those immediately below, just described, excluding the circular room, which comprehends both floors. In this third floor also is the same arrangement of the saloon as that described for the principal floor, but the Order throughout is the Antique Ionic, nineteen feet high with fluted columns, pilasters, &c. surmounted by a coved ceiling rising two feet nine inches.

20. The whole of the apartments in both these floors are ceiled with canvas, or teak wood frames, through which are fitted into the beams strong brass hinge-hooks for punkahs, and brass for lamps or lustres, to an extent ample for every purpose of use or ornament.

21. In both floors the doors are painted in imitation of different woods (Satin wood, Mahogany, Oak, Maple, &c.) and highly varnished; and, with a few exceptions (in the minor apartments of the wings) they are fitted with plated locks, bolts, and hinges, and hand-guards; also on the principal floor.

22. All the apartments in the wings of both floors are coloured in distemper, in light tints of various colours; and the walls, as high as the surbase of the vestibule, and four staircases are painted in imitation of marble; all with very good effect. There are twelve fire-places, with carved mantel pieces of teak, also painted and varnished in successful imitation of rare marbles.

23. The floors of the whole of the public apartments of the principal story, including the vestibule and landing places of the great staircases, are paved with polished marble; and those of the corresponding apartments in the third story, with the landing places of all the four staircases, are laid with teak boarding.

24. The whole of the public rooms in both floors, and the columns in the wings, are finished with polished stucco, in imitation of the Madras chunam; and it may here be observed, that the flutings and finishings of all the columns, exterior and interior, are remarkably well defined, and evenly and sharply wrought; a completion very rare, where brick and plaster are the materials, in houses even of the highest pretensions in this country.

25. The basement floor is finished in a plain style, having a simple moulded band under the beams and no ceilings. The doors and windows are of appropriate substantial construction, fitted with brass locks, bolts, and hinges, and painted plainly. Under the circular room (of paragraph 15) are four strong lock-up closets for treasure, plate, jewels, or other articles of value, with a large open space for a guard.

In the arches of the treble windows of this floor, fifteen in number, are coloured fan-lights.

26. In the west wing is a steam-bath, complete in all respects, executed subsequently to the erection of the building, as we were informed by Colonel M'Leod, at the particular desire of the Nuwaib Nazim.

27. All the exterior colonnades and porticoes in the basement and principal floor, as well as the vestibule and staircases of the basement, are paved with stone.

28. Koah roads, twenty feet wide, have been constructed, and well rolled, in all that portion of the ground about the Palace which has yet been cleared of old buildings: the banks of the river have been sloped off and sodded throughout the whole extent (with the exception to a very small portion, for which it seems earth was not procurable) and stone posts have been inserted along the top, as fastenings for boats. The whole of the ground (cleared) has been smoothed and grassed, and completely drained.

29. At a short distance, in front of the Palace, is a handsome sundial, five feet in diameter, a surplus stone so converted by Lieut. Cunningham; it rests on a pillar based on stone steps, and forms a useful and appropriate appendage to the premises.

30. A substantial stone ghat, fifteen feet wide, has been constructed near the Palace for the convenience of the Nuwaib, and at about 800 yards to the south of the Palace a large *Noubulkahneh* gateway has been erected, as an entrance to the grounds in that direction. As it was not immediately in view, there did not appear to be any objection to its being built in a style of architecture adapted to its purpose, and the Asiatic or Turkish has been adopted.

32. In concluding this head of our report, it seems proper to advert to the fact of this edifice, in all its departments, having been constructed and completed by natives of the country; the only exceptions to which remark are in regard to the painting and glazing, which portions of the work were executed by professional Europeans. The expressions of approval which will have been found interspersed with the preceding details, were elicited by particular features of the building under review, inviting a more peculiar attention from their importance, or the effect produced by them on the eye of the observer; but they are equally applicable to every part of the structure, which whether considered as a work of art to be admired for its exceeding beauty, or as an example of skilful labor applied to the practical combination of excellent materials, reflects the highest credit on the architect and all

subordinate to him, concerned in its erection. The late rainy season was one of uncommon violence, and had just closed when our survey was made, and the soil far and wide was either inundated or saturated with moisture. Nothing could have more searchingly tested the strength and solidity of a newly erected edifice ; but not a crack or symptom of yielding was to be seen, externally or within, throughout the whole extent of this fabric ; and we conclude our remarks upon it with the expression of a grateful anticipation, that a lengthened durability awaits what we have represented as so pre-eminently worthy of a lasting preservation.

In conclusion, we would here recapitulate, in a few words, the opinion to which our inquiries have led regarding the three points to which reference is made in the second paragraph of our report.

As to the execution of the works, our verdict after a careful examination of all that presented itself to our view, is one of unqualified approval and commendation.

A plan of the premises with which the architect has kindly furnished the Committee, is appended ; and will render intelligible at a glance the relative sites of the different buildings forming the subject of this report.

We have, &c.

(Signed) R. H. RATTRAY,
 „ W. CRACROFT,
 „ HENRY DEBUDE,
 „ W. R. FITZGERALD.

CALCUTTA,
 10th Nov., 1838.

ART. IV.—*Researches on the Gale and Hurricane in the Bay of Bengal on the 3rd, 4th, and 5th of June, 1839 ; being a first Memoir with reference to the Theory of the Law of Storms in India.* By HENRY PIDDINGTON.

PART I.

The notices of Colonel Reid's Book on the Law of Storms, which appeared in the Calcutta papers and Edinburgh Review, had much excited my attention ; for the subject was, to me, one connected with many associations of early life, and more especially with one instance in which to the veering of a hurricane alone I owed my safety from shipwreck, after cutting away the mainmast of a vessel which I commanded.

Hence, having some leisure when the tempest of the 2nd to the 6th of June, 1839, occurred off the Sand Heads, I was induced to undertake the investigation of its different phenomena, with a view to see how far they would accord with the theory of the Law of Storms.